



**COMMONWEALTH OF MASSACHUSETTS**  
**EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**Metropolitan Boston – Northeast Regional Office**

MITT ROMNEY  
Governor

ELLEN ROY HERZFELDER  
Secretary

KERRY HEALEY  
Lieutenant Governor

EDWARD P. KUNCE  
Acting Commissioner

May 19, 2003

Michael Ciara  
Town Manager  
121 Glen Road  
Wilmington, MA 01887

Robert Cain  
Board of Selectmen  
Town of Wilmington  
121 Glen Road  
Wilmington, MA 01887

Re: Water Management Permit Review # 9P-3-17-342.01

Dear Mr. Ciara and Mr. Cain:

The Department of Environmental Protection (the "Department" or "DEP") has completed its review of all the water withdrawal permits issued in the Ipswich River Basin including the Permit issued to the Town of Wilmington (the "Town" or "Wilmington") Permit 9P-3-17-342.01 (the "Permit"). The Permit, as issued in 1991, authorized the Town to withdraw from its groundwater sources in the Ipswich River Basin an annual average daily volume of 0.45 million gallons per day ("MGD") in addition to the 2.91 MGD previously registered to the Town. The Permit further allowed the Town to increase that annual average daily permitted withdrawal to 0.58 MGD in 1994, to 0.65 MGD in 1999 and 0.80 MGD in 2004.

In accordance with the Water Management Act Regulations, 310 CMR 36.33(4), the Department initiated a review of the Permit in 1994. As a result of that review, the Department modified the Permit in 1997. The Department determined that actual withdrawals above the registered volume were significantly below the volumes allocated in the 1991 Permit. Accordingly, the Permit, as modified in 1997, provided that the authorized annual average daily withdrawal volume would remain at 0.45 MGD until 1999.

When the Permit was modified in 1997, the Department intended to require the permit holders in the Ipswich River Basin to file for a permit review in 1999. The Department delayed

This information is available in alternate format. Call Aprel McCabe, ADA Coordinator at 1-617-556-1171.

205A Lowell St. Wilmington, MA 01887 • Phone (978) 661-7600 • Fax (978) 661-7615 • TTD# (978) 661-7679

DEP on the World Wide Web: <http://www.mass.gov/dep>

Printed on Recycled Paper

that requirement until the United States Geological Survey (USGS) had completed its studies of streamflow and habitat in the Ipswich River. After these studies were nearly complete, on December 13, 2002, the Department issued an Order to Complete requesting the Town to submit additional information. The Town responded to the Order to Complete on March 18, 2003. The Department has reviewed the information from the USGS studies along with the Town's response to the Order to Complete and has issued the Modified Permit (enclosed herein) that reflects a balance between the public's need for a safe and reliable source of drinking water and competing environmental, economic and recreational interests.

As a result of this review, the Department has determined that there is documented evidence that water withdrawals and to a lesser extent an increase of impervious area and development along with the export of wastewater to other basins substantially contribute to low flow in the Ipswich River. These low flows significantly impair the ability of the river to function as a habitat for aquatic life and wildlife that are adapted to riverine conditions, an area for primary and secondary contact recreation and a reliable source of safe drinking water. The Department has further determined that since 1997, with the exception of 1999, the Town's actual raw water withdrawal above the registered volume has been significantly below 0.45 MGD, the raw water volume originally allocated in the 1991 Permit. In these circumstances, the Department sees no reason to increase the volume above the amount originally allocated in 1991. Instead, the Modified Permit keeps the permitted volume to the 0.45 MGD originally allocated in 1991.

The Department has further determined that unless and until conditions in the Ipswich River significantly improve, it is unlikely that any permittees in the Ipswich River Basin will be approved to increase their authorized withdrawals. In these circumstances, it is essential that all permittees keep their withdrawals at or below their authorized volumes. Consistent with this purpose, the Modified Permit provides that if for any year beginning 2004, the Town exceeds its authorized volume, the Town shall implement a water bank that provides for keeping at least two gallons of water within the basin for every additional gallon of water demand. To avoid this requirement, the Town should work to keep within its total authorized withdrawal.

Requirements applicable to permittees that withdraw water from the Ipswich River Basin for water supply purposes

To reduce the adverse impacts on the ability of the Ipswich River to sustain all its uses, the Department has established the following performance standards for permittees that withdraw water from the Ipswich River Basin for water supply purposes:

1. Residential per capita water use of 65 gallons per day or less;
2. Unaccounted for water of 10% or less; and
3. A summer withdrawal cap based on minimizing the difference between summer (May thru September) and winter (January thru March and November thru December) withdrawals derived from each community's summer to winter withdrawal ratio.

The standards set forth above shall hereinafter be referred to collectively as the “Ipswich River Basin Performance Standards”.

The standards of 65 gallons per day or less for residential per capita water use and 10% or less for unaccounted for water are taken from the Water Resources Commission performance standards for effective water conservation for public water suppliers. While these performance standards represent the minimum standards required for compliance with the Modified Permit, the Department believes that through the implementation of all the terms and conditions of the Modified Permit, the Town can exceed the performance standards for residential per capita water use and unaccounted for water. The Department will review the Drinking Water Program’s Annual Statistical Report when evaluating compliance with these performance standards. The reporting requirements added in the Modified Permit are intended to standardize the information submitted to the Department to assess compliance with the Modified Permit and the Ipswich River Basin Performance Standards.

Since streamflow is particularly stressed during the low flow summer period, the summer withdrawal cap specifically targets conservation when water demands are high and streamflow is low. The summer withdrawal cap is intended to reduce the difference between summer and winter water use. Based on the four-year period 1999 thru 2002, communities with an average summer to winter withdrawal ratio of 1.4 or greater are required to reduce the summer -winter difference in withdrawal volumes by 50% beginning in calendar year 2004. Communities with an average summer to winter withdrawal ratio that is less than 1.4 are required to reduce the summer -winter difference by 25% beginning in calendar year 2004. The median of the four year summer to winter withdrawal ratio is 1.4. Reductions in the summer-winter difference are based on the year, within the four- year period from 1999 thru 2002, when seasonal water use was highest.

In the four- year period from 1999 thru 2002, Wilmington had an average summer to winter water use ratio of 1.42. Wilmington experienced its highest summer water use in 1999. Wilmington shall achieve a 50% reducing in the difference between its 1999 summer and winter water use. To achieve this reduction, Wilmington shall keep its water use at or below an average daily volume of 3.36 MGD from May 1<sup>st</sup> thru September 30<sup>th</sup>. Wilmington’s overall system wide water use from May 1<sup>st</sup> thru September 30<sup>th</sup> shall not exceed the seasonal cap of 514.08 million gallons. Applying this approach, the Department has determined that the summer withdrawal cap for Wilmington is 514.08 million gallons. Wilmington has been able to limit summer water use to an average daily volume of 3.31 MGD during the five month summer season.

To assist permittees in complying with the Ipswich River Basin Performance Standards for residential per capita use and seasonal water use and to improve streamflows so that the Ipswich River can once again function as a viable habitat for aquatic life adapted to riverine conditions, and remain a reliable source of safe drinking water, the Department has required the following restrictions on nonessential outside water use:

1. All permittees withdrawing water from the Ipswich River Basin for public water supply purposes shall institute voluntary restrictions on nonessential outside

water use whenever streamflow in the Ipswich River falls below 0.56 cubic feet per square mile (“cfs”) for three consecutive days in the period from May 1<sup>st</sup> thru September 30<sup>th</sup>. The streamflow threshold of 0.56 cfs is based on wetted perimeter flow for a natural site in the Ipswich River as determined by the USGS habitat assessment study. A fully wetted channel bed in riffles is an index of the carrying capacity of a stream that is proportional to fish-food producing areas.

2. All permittees withdrawing water from the Ipswich River Basin for public water supply purposes shall implement and enforce mandatory restrictions on nonessential outside water use whenever streamflow falls below 0.42 cfs for three consecutive days in the period from May 1<sup>st</sup> through September 30<sup>th</sup>. Based on evaluation of streamflow requirements, USGS determined that 0.42 cfs is a reasonable target for habitat protection necessary to support aquatic life adapted to riverine conditions. At a minimum, mandatory restrictions on nonessential outside water use shall include restrictions requiring hand held hoses only and limiting the hours for outside watering to exclude 9 a.m. to 5 p.m. when evapotranspiration is typically the highest. Notwithstanding the foregoing, irrigation of public parks and recreational fields by means of automatic sprinklers equipped with moisture sensors or similar control technology may also be permitted outside of the hours 9 a.m. to 5 p.m. Enforcement of mandatory restrictions shall include the assessment of penalties or the imposition of fines for violations.

A notice of the voluntary and mandatory restrictions shall be published in the local newspaper. When streamflow is greater than the thresholds set forth above for a period of seven consecutive days, the corresponding level of restriction may be lifted.

The restrictions set forth above apply to nonessential outside water use. The term “nonessential outside water use” includes uses that do not have health or safety impacts, are not required by regulation and are not needed to meet the core functions of a business or other organization. Examples of nonessential outside water uses shall include: irrigation of lawns and ornamental plants; washing of vehicles unless necessary for operator safety subject to the exceptions set forth below; washing of building exteriors, outside structures, streets, sidewalks, and parking lots with the exceptions set forth below; the filling of swimming pools and hot tubs, and the operation of decorative pools and fountains. Examples of essential outside water uses may include outdoor water use for the production of food and fiber and the maintenance of livestock and poultry; outdoor water use by plant nurseries to maintain their stock; the watering of golf course greens; the washing of vehicles by commercial car washes, maintenance facilities, and dealers; and the washing of exterior building surfaces including windows, parking lots, driveways or sidewalks, prior to application of paint, preservatives, or stucco or for the preparation of the surface prior to paving or repointing of bricks, or if required by health and safety regulations.

To enable the Town to comply with the Ipswich River Basin Performance Standards for residential per capita water use and seasonal water use, the Modified Permit requires the Town to develop and implement an enhanced water conservation plan in the event that any year

beginning calendar year 2004, the Town is not in compliance with these Performance Standards. In light of this provision, the Department intends to review at least annually the progress that each permittee has made in meeting the Ipswich River Basin Performance Standards and in complying with the requirements of the Modified Permit. Moreover, the Department will take whatever action it deems appropriate to bring permittees into compliance with the modified permits and the Ipswich River Basin Performance Standards including without limitation requiring more stringent restrictions on nonessential outside water use, further modifying the permits in the Ipswich River Basin, and/or initiating enforcement actions with or without the assessment of civil administrative penalties. That being said, the Department remains committed to working with Wilmington and all the Ipswich River Basin permittees so that the Ipswich River may once again sustain all its uses as a habitat for aquatic life and wildlife adapted to riverine conditions, a place for secondary and primary contact recreation and a reliable source of safe drinking water.

### Restricting the Use of Unregulated Irrigation Wells

The Department is aware that restrictions on nonessential outside water use have already caused and may in the future cause an increase in the number of wells that are not subject to regulation under the Water Management Act and are used solely or partly for irrigation (“unregulated irrigation wells”) in communities within the Ipswich River Basin. The cumulative impact of these wells not only adversely affects the ability of the Ipswich River to function both as a viable habitat for aquatic life and a reliable source of safe drinking water, but also undermines the effort to reduce nonessential outside water use in the Ipswich River Basin in the summer, when flows are low. Because of the stressed nature of the Ipswich River, the Department has included among the Ipswich River Basin Performance Standards a performance standard that expressly acknowledges that it is appropriate to subject the use of unregulated irrigation wells located within communities wholly or primarily in the Ipswich River Basin to the same restrictions on nonessential outside water use triggered by streamflow thresholds and required by the Modified Permit, that apply to customers of the public water system. Communities that restrict the use of unregulated irrigation wells, while demonstrating compliance with the Performance Standards for residential per capita water use and seasonal water use, will avoid subjecting the customers of the public water system to a total ban on nonessential outside water use, whenever streamflow in the Ipswich River is below 0.42 cfs for three consecutive days between May 1<sup>st</sup> and September 30<sup>th</sup>.

### Proactive Actions by the Town of Wilmington

The Department wishes to commend the Town of Wilmington for taking a number of steps aimed at ensuring that the Town has a safe and reliable source of drinking water both now and in the future. To ensure the success of this effort, it is essential that all Town departments, boards, officials and employees work together to comply with the terms and conditions of the Modified Permit including without limitation the water conservation requirements.

In particular, the Department commends the Town for its recent decision to suspend use of the wells in the Maple Meadow Brook aquifer because of water quality issues. To support the Town’s effort to protect the public health and the environment, the Modified Permit provides

that the Town shall not resume the use of these wells without obtaining the prior written approval of the Department's Drinking Water Program and a modification of the permit by the Department's Water Management Act Program that establishes streamflow thresholds for the use of these wells.

The Department further commends the Town for taking on the difficult task of preparing a Comprehensive Water Resources Management Plan that will evaluate alternatives for meeting the Town's long-term drinking water and wastewater needs. In the plan, the Town will evaluate out of basin water sources that can supplement the Town's existing Ipswich River Basin groundwater sources, identify options for improving storm water recharge, outline a strategy for eliminating sources of excessive infiltration and inflow in the sewer system, and locate possible sites for sewage disposal systems that discharge to the ground. The Comprehensive Water Resources Management Plan will propose a recommended plan and a schedule for implementing that plan. The Modified Permit requires the Town to implement the plan and schedule recommended in the Comprehensive Water Resources Management Plan. Once the Comprehensive Water Resources Management Plan is complete, the Modified Permit may be further modified. Such modifications may include without limitation the addition of streamflow thresholds limiting the use of some or all of the Town's groundwater sources, changes in the authorized volumes and/or authorized withdrawal points and/or incorporation of the mitigation measures recommended in the Comprehensive Water Resources Management Plan.

#### Special Requirements for the Town of Wilmington.

As of the issuance date of the Modified Permit, the Town is not able to pump the Brown's Crossing Well, the Barrow's Wellfield, and the Salem Street Well (collectively the "Sargent Treatment Plant Wells") at their permitted amounts. To protect Martin's Brook, the Modified Permit provides that the Town shall notify the Department in writing at least thirty days prior to commencing the design of any improvements to the Sargent Treatment Plant Wells. The Department reserves the right to establish streamflow thresholds and/or impose any other conditions limiting the use of the Sargent Treatment Plant Wells that the Department deems appropriate to achieve the purposes of the Water Management Act.

On May 13, 2003, the Department issued an Emergency Declaration (enclosed herein) that allows the Town to purchase water from the MWRA system through its connection with the City of Woburn in order to compensate for the shut down of the wells in the Maple Meadow brook aquifer. Unless extended, the Emergency Declaration expires on November 13, 2003. The Emergency Declaration requires that the Town implement mandatory restrictions on nonessential outside water use. The term "nonessential outside water use" has the same definition for purposes of the Modified Permit and the Emergency Declaration. The Town shall implement and enforce the most stringent of the restrictions on nonessential outside water use that are required by the Emergency Declaration and the Modified Permit.

In 2002, demand from commercial and industrial customers was 37% of the Town's total water demand. Given this high percentage, any program to reduce water use in Wilmington must target commercial and industrial users. Accordingly, the Modified Permit requires the Town to implement a plan to reduce water use by Wilmington's ten largest commercial and

industrial customers and report on the effectiveness of that plan by March 1, 2005. In the Modified Permit, the Department expressly reserves the right to require the Town to implement additional measures to reduce commercial and industrial water use.

Procedure for Appeal

The Town has the right to appeal the Modified Permit in accordance with 310 CMR 36.40. Any such appeal must be received by the Department within twenty-one days of the date of receipt of the Modified Permit. Only the portions of the Modified Permit which reflect a modification of the Town's current permit may be the subject of an appeal, since the period for appealing provisions within the Town's current permit has expired.

If you have any questions regarding this permit, please contact Kellie O'Keefe at 978-661-7765. Please note that the Northeast Regional Office of DEP will be moving in mid to late June to One Winter Street in Boston. Please check the DEP website [www.State.ma.us./dep/nero](http://www.State.ma.us./dep/nero) for further information on how to contact regional staff after we move to Boston.

Very truly yours,

Madelyn Morris  
Deputy Regional Director  
Bureau of Resource Protection

CC: Duane Levangie, WMA Boston

Michael Woods, Water Department, 121 Glen Road, Wilmington, MA 01887

Jon Beekman, SEA Consultants, Inc., 485 Massachusetts Ave., Cambridge, MA 02139